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### **REMARKS**

This amendment and remarks are submitted in response to the outstanding office action mailed August 10, 2004. Reconsideration of the present application is requested.

In this amendment, claims 1, 3, 14, 18, 55, 56, 57, 59, 61, 62, 63, 65 and 66 are amended and claims 49, 50 and 64 are canceled. The currently pending claims in the application are 1, 2, 4-13, 15-17, 19-48, 51-63 and 65-66.

Independent claims 1, 55, 56, 57, 61, 62, 63, 65 and 66 have been amended to recite that a pultruded part according to the present invention comprises a reinforcing structure that contains planar, non-overlapping fibers that do not extend over or cover one another in any particular layer. Because the reinforcing fibers are properly oriented and do not overlap, the oriented configuration of the fibers in this reinforcing structure provides an extremely thin profile or wall thickness of about 0.025-0.045-inches when incorporated with longitudinal rovings and a thermoset resin to provide the claimed pultruded part.

The amendments to the claims are fully supported by the specification and claims as originally filed and do not include new matter. In particular, a pultruded part incorporating the recited reinforcing structure having a wall thickness of about 0.025- 0.045 inches is described in the specification at page 8, lines 4-5 and in originally filed claim 49. Thermoset resins used to form the fiber-resin matrices in the pultruded part are described in the specification at page 17, line 22 bridging to page 19, line 16. The orientation of the fibers in the reinforcing structure is described in the specification at page 20, lines 1-4. Finally, typographical errors are corrected, and other self-evident changes in view of the amendments made to claim 1 are made in dependent claims 3, 14, 18 and 59.

In the outstanding office action, all of the claims were rejected as being unpatentable in view of various combinations of references. These rejections are summarized in the following table.

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| Currently Rejected Claims                                | References                                       |
|--|--|
| 1-8, 11-17, 24-25, 28-29, 35, 48, 51-54, 61-61 and 64-66 | Haraguchi (primary), Beall, Shannon and Radvan   |
| 22-23, 26-27 and 56-60                                   | Haraguchi (primary), Shannon and Beall           |
| 9-10 and 55  | Haraguchi (primary), Shannon, Beall and Martin   |
| 14-15, 32-34, 36-47 and 62-63                            | Haraguchi (primary), Shannon, Beall and Vane     |
| 18-23 and 30-31  | Haraguchi (primary), Shannon, Beall and Beer     |
| 49-50  | Haraguchi (primary), Shannon, Beall and Heikkila |

As evident from the table, each rejection is based on a single primary reference, Haraguchi, in view of several different secondary references that are used to overcome specific deficiencies of the primary reference

The deficiencies of Haraguchi are clearly set out in the office action. The Examiner has stated that Haraguchi 1) "fails to teach a pultruded part that also comprises a plurality of longitudinal rovings oriented along the longitudinal axis and a resin matrix surrounding the longitudinal rovings and the reinforcing structure," 2) "fails to teach the use of binder to attach the permeable web to the first reinforcing fibers," 3) "fails to teach the use of bi-component fibers with core-sheath configuration," 4) "fails to teach the use of stitching," and 5) "fails to teach perforations or holes in the reinforcing structure, it also fails to teach the use of a surface treatment on the fibers."

Because of these deficiencies of the primary reference, the secondary references are used to identify the recited features missing from Haraguchi. In brief, Shannon is used show a bonded mat held together with by a binder; Beall is used to show a pultruded part with roving strands and a mat; Radvan is used to show a polyvinyl acetate binder used with a reinforcing material; Martin is used to show a multi-component filament; Vane is used to show layers of yarns or threads that are stitched together; and Beer is used to show a permeable mat that may be treated with a silane composition.

Applicants note, however, that Haraguchi also fails to teach or suggest a reinforcing structure having reinforcing fibers that are specifically oriented in a generally planar non-overlapping configuration so that the reinforcing fibers do not extend over or cover one another in order to provide a pultruded part having a wall thickness of 0.025-0.045 inches as

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now recited in all of the pending independent claims. This deficiency of Haraguchi is not overcome by any of the secondary references, Beall, Shannon, Radvan, Vane, Martin or Beer. There has been no prior art identified that teaches or suggests the now claimed configuration of the reinforcing fibers to provide a pultruded part with the claimed wall thickness.

Applicants further submit that these particular features of the claimed invention are also not taught or suggested by the secondary reference, Heikkila. As set out in the table, original claims 49 and 50 were only rejected as being unpatentable over Haraguchi in view of Shannon and Beall and further in view of Heikkila. Heikkila was relied on by the Examiner to provide a report of "fiber-reinforced structural members with a wall thickness of about 1 mm to 10 cm (0.039 inches to 3.9 inches) or larger if needed" because this feature was not reported in the other six secondary references. Applicants submit that this combination, Haraguchi in view of Shannon and Beall and further in view of Heikkila, does not make the amended claims obvious because, either alone or combined, these references do not teach or suggest the recited, specifically oriented, non-overlapping reinforcing fibers. Furthermore, Heikkila reports a structural member that has a thermoplastic core that is covered with a thermoset layer. This reported structural member is clearly distinct from a pultruded part having a cured thermoset resin matrix substantially surrounding the longitudinal rovings and the reinforcing structure so that the pultruded part has a wall thickness of about 0.025 -0.045 inches. The thermoset coating reported in Heikkila is a coating on a thermoplastic core, it is not a pultruded part with a uniform thin profile or thin wall thickness. In view of these differences, Applicants submit that the pending claims, as amended, are now patentable.

In sum, all of the independent claims now include the feature that the pultruded part has a wall thickness of about 0.025-0.045 inches that was recited in originally filed claim 49. Because claim 49 would have been patentable over the references relied on by the Examiner to reject that claim for the reasons set out above, Applicants submit that combining claim 49 with the independent claims overcomes all of the other rejections set out in the office action.

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All of the rejections are therefore moot for these reasons, and Applicants request that those rejections be withdrawn.

Applicants further note that claims 1-47 and 55-66 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-76 of co-pending Application No. 10'015,106. In order to provide a complete response to the outstanding office action, Applicants will submit an appropriate terminal disclaimer to overcome this rejection upon notice of allowable subject matter in the present application.

Finally, Applicants respectfully disagree with the Examiner's assertions that are set out in the office action on pages 2-3. In this assertion, the Examiner implies that Applicants have agreed to the remarks made by the Examiner in previous office actions because there was no response made to those remarks submitted by the Applicants in the amendment dated May 26, 2004 related to bonding methods reported in Shannon. A review of Applicants' remarks in the May 26, 2004 paper indicate the claims were amended to recite particular embodiments of the invention that bond a permeable transport web to reinforcing fibers in order to provide a reinforcing mat that has longitudinal strength, shear strength and anti-screw resistance to allow the recited reinforcing mat to be carried through a pultrusion die. These statements specifically address the Examiner's remarks because neither Haraguchi nor Shannon report pultrusion processes.

*Continued . . . .*

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In view of the present amendment and remarks, Applicants submit that the claims, as amended, are in condition for allowance and request that the Examiner pass the application to issuance.

Respectfully Submitted,

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By:

  
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